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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/821,852	04/12/2004	Masakatsu Maeda	251428US90	1750

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EXAMINER	
FEELY, MICHAEL J	

ART UNIT	PAPER NUMBER
1712	

NOTIFICATION DATE	DELIVERY MODE
08/09/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/821,852	MAEDA, MASAKATSU	
	Examiner	Art Unit	
	Michael J. Feely	1712	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 July 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-4 and 6-8* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4 and 6-8* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Pending Claims

Claims 1-4 and 6-8 are pending.

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed July 20, 2007 in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on June 6, 2007 has been entered.

Response to Amendment

2. The objection to claim 8 has been overcome by amendment.

3. The rejection of claims 1-4 and 6-8 under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement, has been overcome by amendment.

Response to Arguments

4. Applicant's arguments, see pages 2-3 of the remarks, filed July 20, 2007, with respect to the previous prior art rejection(s) of claim(s) 1-4 and 6-8 over JP 2002-348439 and JP 2001-247747 have been fully considered and are persuasive. Therefore, the rejection has not been reinstated (after removal of new matter). However, upon further consideration, a new ground(s) of rejection is made in view of Takemiya et al (US Pat. No. 6,372,351).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 1-4 and 6-8 rejected under 35 U.S.C. 103(a) as being unpatentable over Takemiya et al. (US Pat. No. 6,372,351).

Regarding claims 1, 3, 4, 6, and 8, Takemiya et al. disclose: ***(1)*** an epoxy resin composition for semiconductor encapsulating (column 2, lines 3-35) essentially consisting of an epoxy resin (column 2, line 49 through column 6, line 22), a phenol resin (column 6, lines 22-49), an inorganic filler (column 9, lines 5-35), a curing accelerator (column 6, line 50 through column 7, line 22), and a carbon precursor (column 7, lines 23-44; column 8, line 41 through column 9, line 5), and wherein the amounts of the inorganic filler and the carbon precursor in the epoxy resin composition are respectively 65-92 wt% (column 9, lines 30-35) and 0.1-5.0 wt% (column 8, line 63 through column 9, line 5); ***(3)*** wherein the carbon precursor is fine particles having an average particle diameter of 0.5-50 μm (column 8, lines 56-62); ***(4)*** wherein the carbon precursor is fine particles having an average particle diameter of 0.5-20 μm (column 8, lines 56-62); ***(6)*** wherein the amount of the inorganic filler in the total amount of the epoxy resin composition is 70-91 wt% (column 9, lines 30-35); and ***(8)*** a semiconductor device comprising a semiconductor element encapsulated using the epoxy resin composition for semiconductor encapsulating according to any one of claims 1-4, 6 and 7 (column 2, lines 3-35).

Takemiya et al. do not explicitly disclose: *(1)* a carbon precursor having a specific electric resistivity in a semiconductor region of 1×10^4 Ω-cm or more but *less than 1 x 10^7 Ω-cm*. Rather, they disclose that the resistivity is 10^7 or above. These ranges abut one another. In light of this, it has been found that, "a *prima facie* case of obviousness exists where the claimed ranges and prior art ranges do not overlap but are close enough that one skilled in the art would have expected them to have the same properties," – *Titanium Metals Corp. of America v. Banner*, 778 F.2d 775, 227 USPQ 773 (Fed. Cir. 1985) *(See MPEP 2144.05)*.

Applicant shows acceptable results when using materials having a resistivity of 10^4 and 10^6 *(see Examples 1-3)*. This is in contrast to poor results when using materials having resistivities of 10^8, 10^9, and 10^{10}. However, there are no results representing the use of materials having a resistivity of 10^7. Without this showing, it can be expected that resistivity values between 10^6 and (approaching) 10^7 *(as claimed)* would have the same or obvious effect as resistivity values of 10^7 *(prior art)*.

Therefore, the instant invention would have been obviously satisfied by the teachings of Takemiya et al. because the upper limit of the instantly claimed resistivity range abuts the lower limit of the prior art resistivity range. These values are so close that one skilled in the art would have expected them to have the same properties.

Regarding claim 7, Takemiya et al. disclose the use of calcined materials produced at similar temperatures *(see column 7, lines 23-44)*; however they fail to explicitly disclose: *(7)* wherein the carbon precursor is produced by carbonizing *a phenol resin* at a calcination temperature of 600-650°C. It should be noted that this is a product-by-process limitation (see MPEP 2113), wherein calcination (high temperature baking) thermally decomposes carbon-

based materials to a product essentially comprising carbon. In light of this, it appears that the baked precursor of Takemiya et al. would have been the same or an obvious variation of the instantly claimed calcined precursor.

Therefore, it appears that the baked precursor of Takemiya et al. would have been the same or an obvious variation of the instantly claimed calcined precursor because both are baked at similar temperature ranges, resulting in a thermal decomposition of the carbon-based materials.

Regarding claim 2, the rationale set forth above regarding claim 7 obviously satisfies the limitation of claim 2 as well: ***(2)*** wherein the carbon precursor has an H/C ratio by weight determined by elemental analysis of 2/97 to 4/93. The calcination (high temperature baking) conditions would appear to dictate the degree of thermal decomposition and final H/C weight ratio of the calcined material.

Therefore, it appears that the baked precursor of Takemiya et al. would have been the same or an obvious variation of the instantly claimed calcined precursor because both are baked at similar temperature ranges, resulting in a thermal decomposition of the carbon-based materials.

Communication

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael J. Feely whose telephone number is 571-272-1086. The examiner can normally be reached on M-F 8:30 to 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on 571-272-1302. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Michael J. Feely
Primary Examiner
Art Unit 1712

August 3, 2007

MICHAEL FEELY
PRIMARY EXAMINER